ment success. The rigorous patient de-identification process employed by the State Inpatient Databases to protect patient confidentiality precludes the analysis of longitudinal clinical data. Therefore, it was impossible to evaluate other equally important outcomes, such as long-term morbidity and mortality or restenosis.

CONCLUSION

Despite a paucity of evidence in support of performing CAS in asymptomatic patients and current CMS guidelines reimbursing CAS for only high-risk symptomatic patients, both VS and non-VS are treating primarily asymptomatic patients. Perioperative rates of stroke and death are equivalent between VS, IC, and IR. Regional variation is substantial, and despite similar outcomes, fewer than 50% of CAS procedures are performed by VS.

AUTHOR CONTRIBUTIONS

Conception and design: RS, AS
Analysis and interpretation: RS, NC, AS
Data collection: RS, NC, AS
Writing the article: RS, NC, AS
Critical revision of the article: RS, ME, EA, LM, AS
Final approval of the article: RS, NC, ME, EA, LM, AS
Statistical analysis: RS, NC, AS
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INVITED COMMENTARY

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This study, based on an administrative database of >4000 carotid stent procedures, has three major findings: (1) 91% of carotid stents are performed in asymptomatic patients, (2) there is significant regional variation in who is performing carotid stents (46% by vascular surgeons in New York and only 19% by vascular surgeons in Florida), and (3) early outcomes across the three specialties performing carotid stenting are equivalent.

The first finding defies rational analysis. It is astonishing that fully 91% of the patients undergoing stenting in New York and Florida in 2005 and 2006 were asymptomatic. There are no level I data supporting carotid stenting as superior to medical management in asymptomatic patients, and the Centers for Medicare and Medicaid Services recently reaffirmed its policy of nonpayment for carotid stenting in asymptomatic patients. So what was the rationale for stenting these patients, and how were those performing the stents reimbursed?

The second finding of marked regional variation in provider type may reflect dissimilar referral patterns. Alternatively, such variation might reflect variability in the acceptance of carotid stenting among different provider types in New York and Florida. Regional variation in provider acceptance of carotid stenting likely stems from the absence of high-level data defining the precise role of carotid stenting and from the nonevidence-based and nonclinical drivers of its use.

The third major finding is problematic. The statistically equivalent stroke rates of 1.3% for vascular surgeons, 1.1% for interventional cardiologists, and 2.0% for interventional radiologists are lower than those seen in prospectively gathered data sets. The authors attribute these unrealistically low stroke rates to "coding errors" and minimize their significance because they should affect all provider types equally and, therefore, not affect the outcome comparisons. Still, the publication of these stroke rates may result in the misinterpretation that carotid stenting is very safe as performed across the full spectrum of practice settings. Of course, the major flaw in these outcome data is their source. Administrative databases paint with very broad brushstrokes and do not permit an accurate determination of procedure indications, risk stratification, nonlethal complications, and longitudinal follow-up.

The real value of this study is its reflection of the current chaos engulfing carotid disease management. The unexplained regional variation in practice patterns results from clinical decisions based on locally prevailing opinion, individual whim, and financial motives. In the absence of widely accepted evidence-based practice standards, such clinical decisions fill the void.